1. Scientific Abstract

This is a prospective Phase I-II study to assess the efficacy and toxicity of HSV-tk + Valacyclovir gene therapy in combination with radiotherapy in previously untreated prostate cancer. This study is comprised of two arms. Arm A will include patients with favorable prognostic factors (PSA < 10, Gleason's score ≤ 6 and clinical stage T2a) and Arm B will include patients with unfavorable prognostic factors (PSA ≥ 10, Gleason's score > 6 and clinical stage T2b-T3). Arm B patients will receive neoadjuvant androgen ablation as part of their standard of care. This study is based on a previous Phase I clinical trial which have showed no toxicity at the dose proposed here when similarly injected and on synergistic effects observed in animal tumor models using HSV-tk gene therapy and radiation therapy. Clinical response will be evaluated by changes in serum PSA level and digital rectal examination, as well as by histological alterations on re-biopsy such as the presence of apoptosis, necrosis, tumor proliferation and immunologic response. Additionally, patients will be followed closely to assess nadir PSA, freedom from PSA-progression, and freedom from local and distant progression and overall survival. Toxicity will be evaluated by RTOG and CTEP criteria.
Statistical analysis shows that 50 patients will be needed in each arm of the trial.